FIG.1

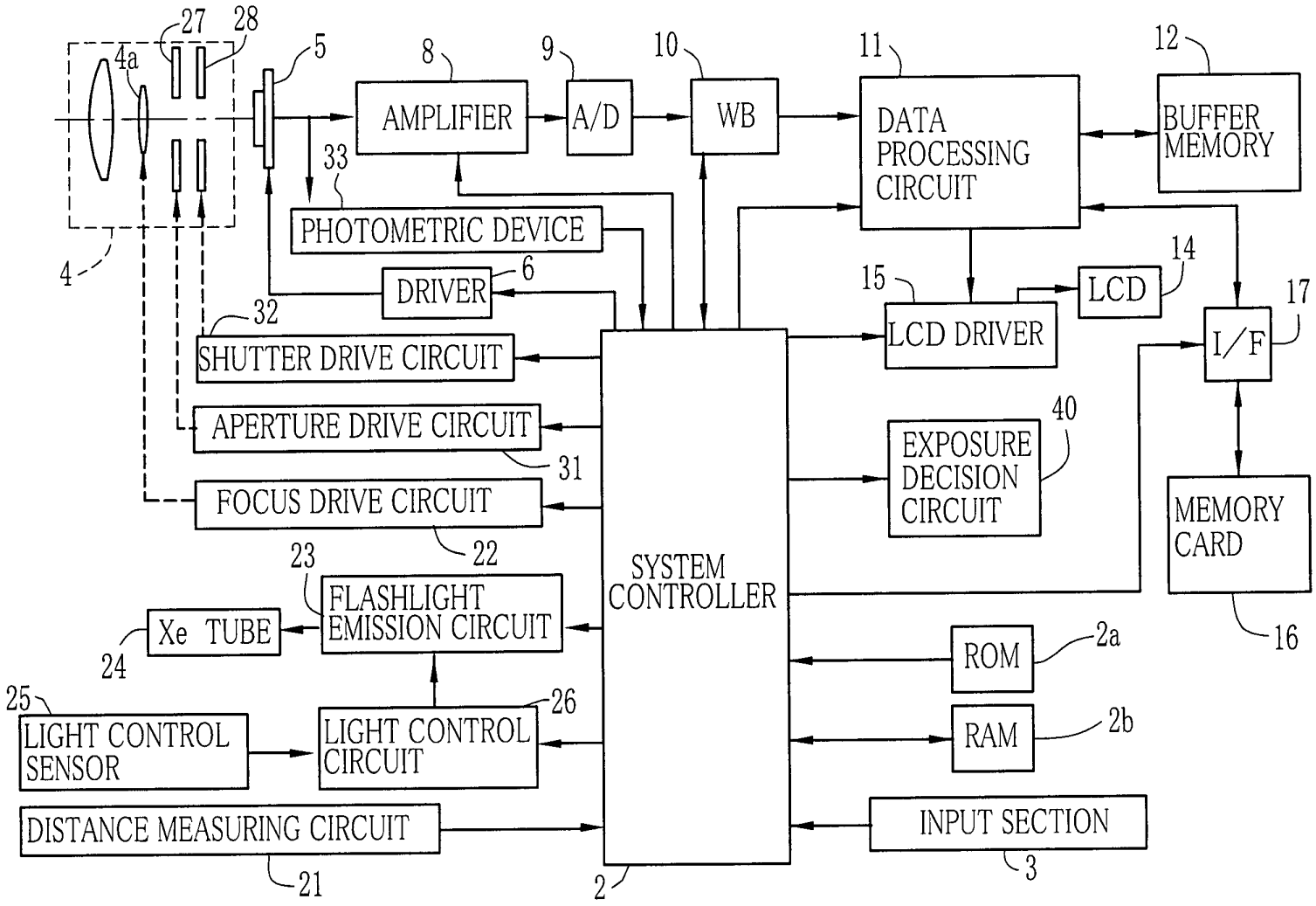
27
28
4a
5
8
9
10
11
12
AMPLIFIER
A/D
WB
DATA PROCESSING CIRCUIT
BUFFER MEMORY
33
PHOTOMETRIC DEVICE
4
DRIVER
6
15
LCD
14
17
32
LCD DRIVER
I/F
SHUTTER DRIVE CIRCUIT
APERTURE DRIVE CIRCUIT
40
EXPOSURE DECISION CIRCUIT
31
FOCUS DRIVE CIRCUIT
22
MEMORY CARD
23
SYSTEM CONTROLLER
FLASHLIGHT EMISSION CIRCUIT
Xe TUBE
24
ROM
2a
16
25
26
LIGHT CONTROL SENSOR
LIGHT CONTROL CIRCUIT
RAM
2b
DISTANCE MEASURING CIRCUIT
INPUT SECTION
21
2
3

FIG. 2

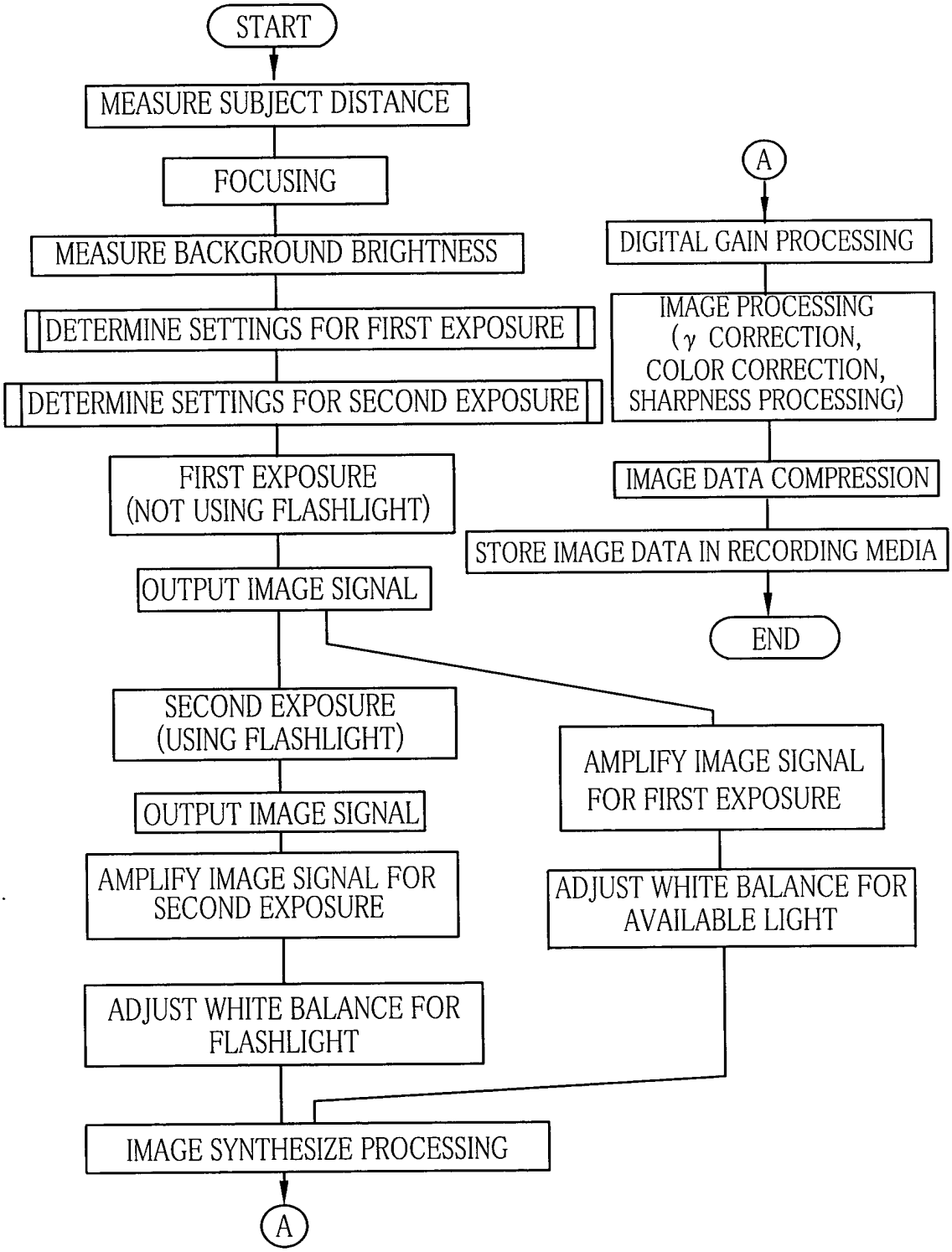
START
MEASURE SUBJECT DISTANCE
FOCUSING
MEASURE BACKGROUND BRIGHTNESS
DETERMINE SETTINGS FOR FIRST EXPOSURE
DETERMINE SETTINGS FOR SECOND EXPOSURE
FIRST EXPOSURE (NOT USING FLASHLIGHT)
OUTPUT IMAGE SIGNAL
SECOND EXPOSURE (USING FLASHLIGHT)
OUTPUT IMAGE SIGNAL
AMPLIFY IMAGE SIGNAL FOR SECOND EXPOSURE
ADJUST WHITE BALANCE FOR FLASHLIGHT
IMAGE SYNTHESIZE PROCESSING
A
A
DIGITAL GAIN PROCESSING
IMAGE PROCESSING (γ CORRECTION, COLOR CORRECTION, SHARPNESS PROCESSING)
IMAGE DATA COMPRESSION
STORE IMAGE DATA IN RECORDING MEDIA
END
AMPLIFY IMAGE SIGNAL FOR FIRST EXPOSURE
ADJUST WHITE BALANCE FOR AVAILABLE LIGHT

FIG. 3

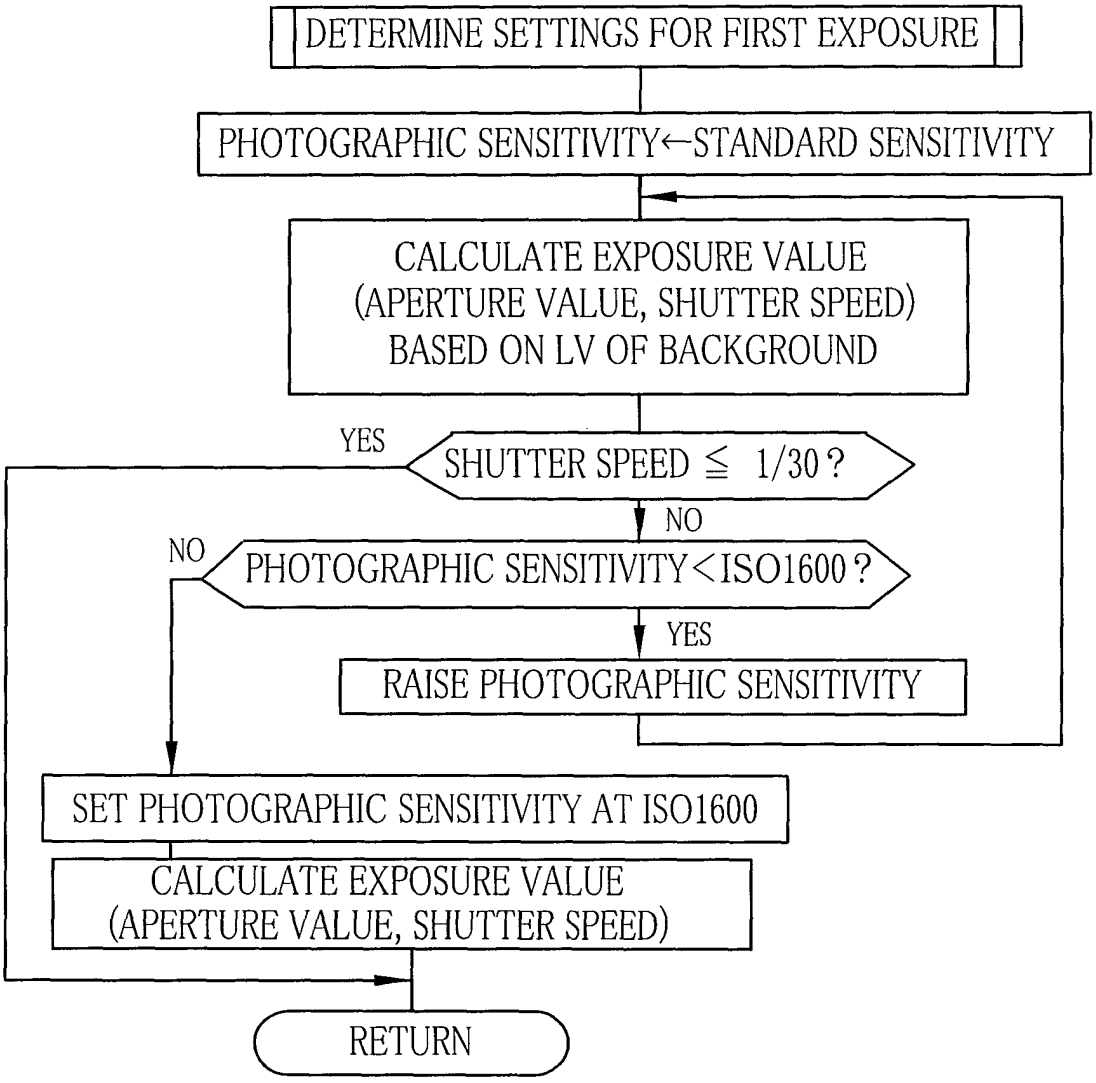
DETERMINE SETTINGS FOR FIRST EXPOSURE
PHOTOGRAPHIC SENSITIVITY←STANDARD SENSITIVITY
CALCULATE EXPOSURE VALUE (APERTURE VALUE, SHUTTER SPEED) BASED ON LV OF BACKGROUND
YES
SHUTTER SPEED ≦ 1/30 ?
NO
NO
PHOTOGRAPHIC SENSITIVITY<ISO1600 ?
YES
RAISE PHOTOGRAPHIC SENSITIVITY
SET PHOTOGRAPHIC SENSITIVITY AT ISO1600
CALCULATE EXPOSURE VALUE (APERTURE VALUE, SHUTTER SPEED)
RETURN

FIG. 4

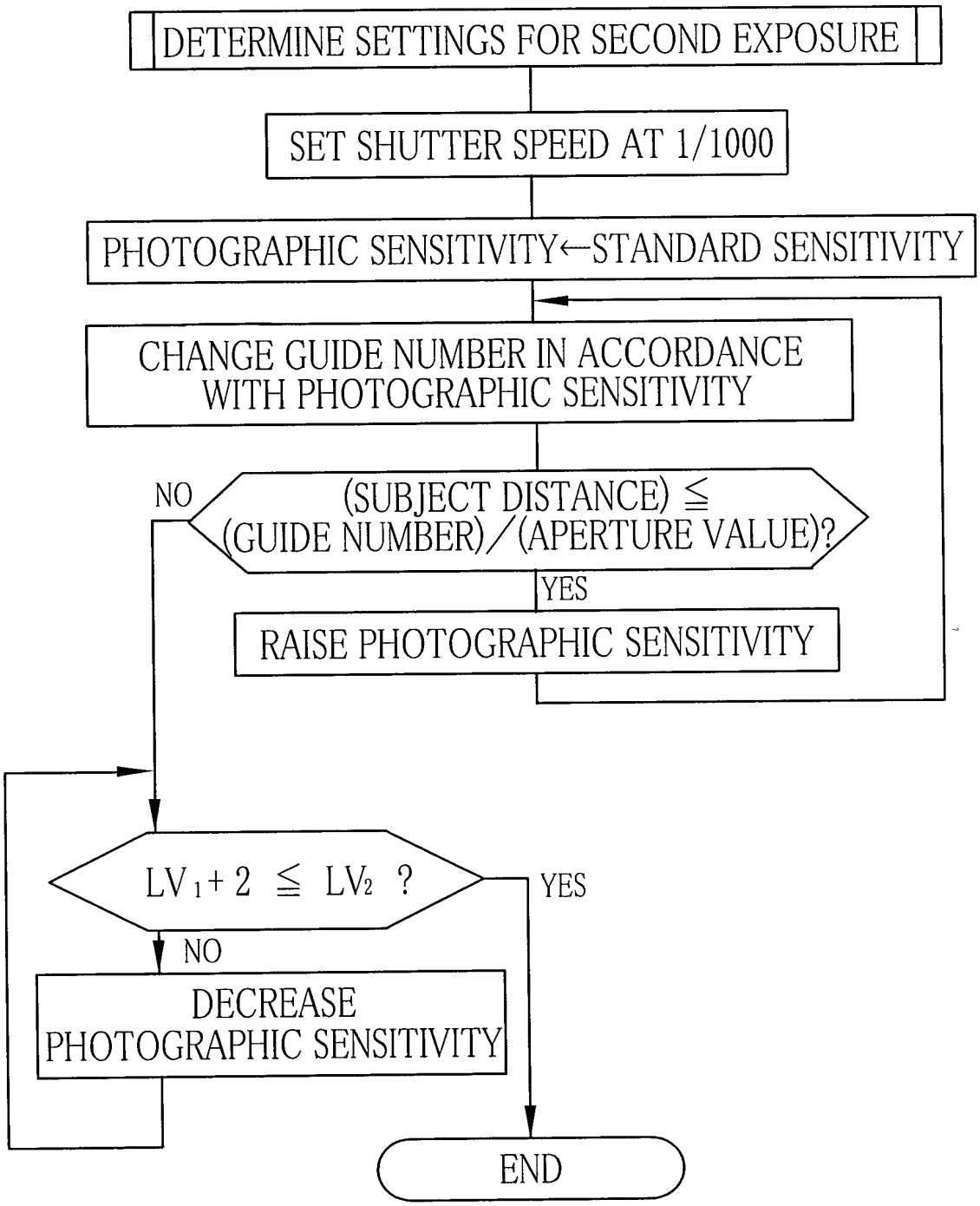
DETERMINE SETTINGS FOR SECOND EXPOSURE
SET SHUTTER SPEED AT 1/1000
PHOTOGRAPHIC SENSITIVITY←STANDARD SENSITIVITY
CHANGE GUIDE NUMBER IN ACCORDANCE WITH PHOTOGRAPHIC SENSITIVITY
NO
(SUBJECT DISTANCE) ≦ (GUIDE NUMBER)/(APERTURE VALUE)?
YES
RAISE PHOTOGRAPHIC SENSITIVITY
LV1 + 2 ≦ LV2 ?
YES
NO
DECREASE PHOTOGRAPHIC SENSITIVITY
END

FIG. 5

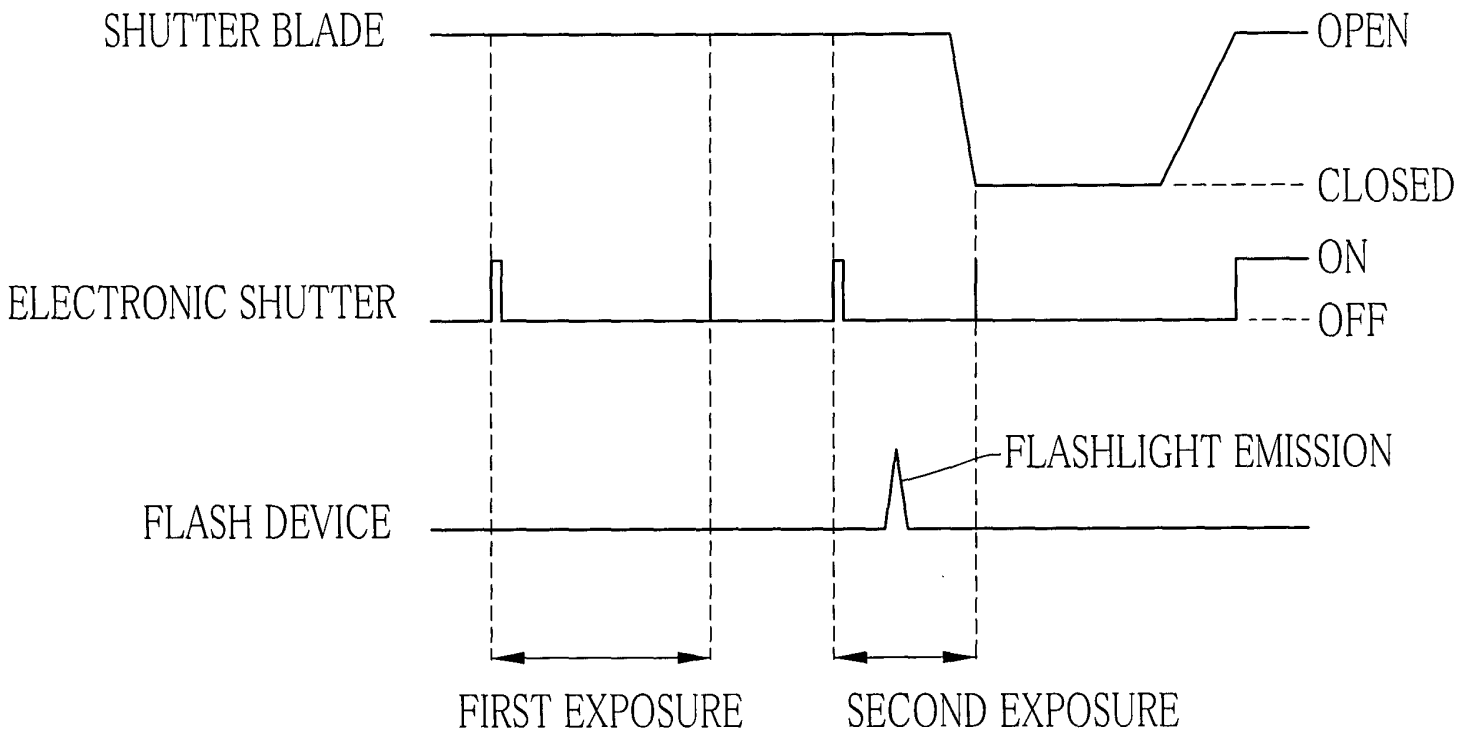
SHUTTER BLADE
OPEN
CLOSED
ELECTRONIC SHUTTER
ON
OFF
FLASHLIGHT EMISSION
FLASH DEVICE
FIRST EXPOSURE
SECOND EXPOSURE

FIG. 6

	FIRST EXPOSURE			SECOND EXPOSURE (SUBJECT DISTANCE: 2m)			
BACK-GROUND	PHOTOGRAPHIC SENSITIVITY	APERTURE VALUE (f)	SHUTTER SPEED (SEC.)	PHOTOGRAPHIC SENSITIVITY	APERTURE VALUE (f)	SHUTTER SPEED (SEC.)	LV_2
LV10	100	4	1/60	100	4	1/1000	14
LV9	100	3.5	1/45	100	3.5	1/1000	13
LV8	100	2.8	1/30	100	2.8	1/1000	12
LV7	200	2.8	1/30	100	2.8	1/1000	12
LV6	400	2.8	1/30	100	2.8	1/1000	12
LV5	800	2.8	1/30	100	2.8	1/1000	12
LV4 AND UNDER	1600	2.8	1/30	100	2.8	1/1000	12

FIG. 7

SECOND EXPOSURE (BACKGROUND: $LV_1 = 8$)

SUBJECT DISTANCE	SENSITIVITY (ISO)	LV_2	$\Delta LV = LV_2 - LV_1$
2m	100	12	+4
3m	100	12	+4
5m	200	11	+3
10m	400	10	+2
20m	400	10	+2